

## ServView CX Rack Tray

# Compact and easy access to up to sixteen server systems from a single rack slot.

Combined screen, keyboard, mouse and sixteen port KVM switch all housed within a neat fold-up industry standard 1U rack slot.



### Customer Support Information

Order toll-free in the U.S.: Call 877-877-BBOX (outside U.S. call 724-746-5500)  
FREE technical support 24 hours a day, 7 days a week: Call 724-746-5500 or fax 724-746-0746  
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### Federal Communications Commission and Industry Canada Radio Frequency Interference Statements

This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

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This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

## Instrucciones de Seguridad

### (Normas Oficiales Mexicanas Electrical Safety Statement)

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá de lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico debe ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
  - A: El cable de poder o el contacto ha sido dañado; u
  - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
  - C: El aparato ha sido expuesto a la lluvia; o
  - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
  - E: El aparato ha sido tirado o su cubierta ha sido dañada.

## Contents

1. Specifications.....	6
2. Introduction .....	7
2.1 What's Included .....	8
2.2 Additional Items You May Need .....	9
3. Installation.....	10
3.1 Suitable mounting locations.....	10
3.2 Mounting the rack tray .....	10
3.3 Connecting the rack tray .....	12
3.3.1 The EXternal link (network or remote user).....	12
3.3.2 Server access module links .....	13
3.4 Power Connection .....	14
4. Configuration .....	15
4.1 Initial Configuration .....	15
5. Operation.....	16
5.1 Opening and closing the rack tray.....	16
5.1.1 To open the rack tray .....	16
5.1.2 To close the rack tray .....	17
5.2 Operating the rack tray .....	18
5.2.1 The screen controls .....	18
5.2.2 Using the OSD menu for the screen.....	19
5.2.3 Selecting server channels .....	19
Appendix A. Safety Information .....	20
Appendix B. Screen specifications .....	21

### 1. Specifications

Approvals:	CE, FCC
Software Compatibility:	Operates with all known software and operating systems including Windows®, Linux®, Unix®, BSD, all Sun® OS, all Mac® OS, NetWare®, etc.
Operating Temperature:	32 to 104°F (0 to 40°C)
Power:	DC jack (power adapter included)
	Input: 100–240 VAC, 50/60 Hz
	Output: 12VDC, 60W

## 2. Introduction

Thank you for choosing the Black Box ServView CX Rack Tray which combines screen, keyboard, mouse and sixteen port KVM switching while occupying only a single rack slot. The screen and keyboard slide out to provide quick access to all systems when working in the server room. All models also facilitate either remote or global access for authorised users who are away from the server room.

All KVM links to servers are made using Black Box Server Access Modules (SAMs) that attach to the rack tray rear panel via standard CATx cables. These make installation straightforward while ensuring that all cabling remains neat and uncluttered. See Figure 2-1.

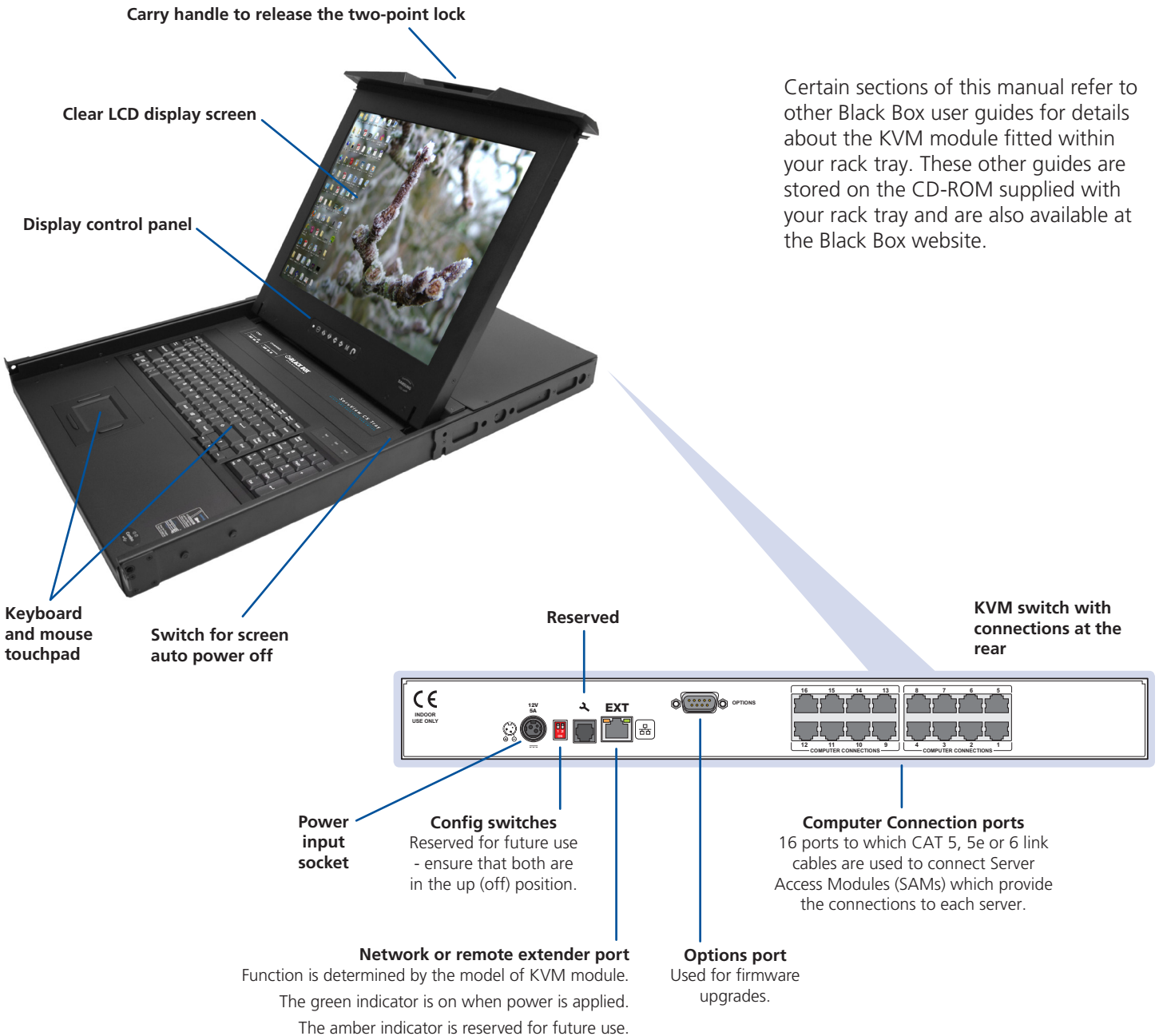


Figure 2-1. The front and rear panels of the ServView CX Rack Tray.

### 2.1 What's Included

Your package should include the following items. If anything is missing or damaged, contact Black Box at 724-746-5500 or [info@blackbox.com](mailto:info@blackbox.com).

- ServView CX rack tray assembly
- Left and right mounting brackets
- 8 x screws and cup washers
- 6 x cage nuts
- Power adapter and power cord
- CD-ROM containing this user manual in PDF format
- Safety leaflet - Please carefully read this leaflet.



### 2.2 Additional Items You May Need

- Server Access Modules:

PS/2-style - Analog video, PS/2-style keyboard and PS/2-style mouse. Part code: KV1400A.

USB - Analog video, USB keyboard and mouse. Part code: KV1401A.

Sun - Analog video, Sun keyboard and mouse plus 3.5mm audio jack. Part code: KV1404A.

Console SAM - (for KVTA174UK-16 only) D-sub 9-way female. Part code: KV1407A.

## 3. Installation

### 3.1 Suitable mounting locations

- It is very important to locate the ServView CX Rack tray in a suitable environment.
- The surface for placing and fixing the rack tray should be stable and level, or mounted into a suitable cabinet.
- Make sure the place has good ventilation, is out of direct sunlight, away from sources of excessive dust, dirt, heat, water, moisture and vibration.
- Position the rack tray with respect to related facilities.

### 3.2 Mounting the rack tray

- 1 Determine the appropriate position for the rack tray within your rack frame. Insert two of the supplied cage nuts in each of the rear vertical rack rails and one cage nut in the lower position of each front rack rail. See Figure 3-1.

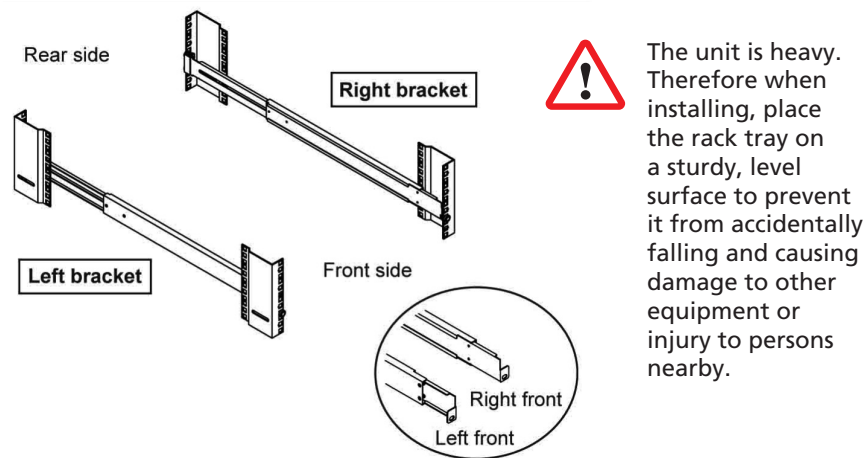


Figure 3-1. The mounting brackets.

- 2 Attach the supplied left and right mounting brackets to the positions in your rack frame where the cage nuts are located and adjust the bracket depths to suit the depth of the rack.

For each mounting bracket:

- Use two M6 screws and cup washers to fix the bracket to the rear rack rail.
- Use one M6 screw and cup washer (only in the lower hole of the bracket) to fix the bracket to the front rack rail.

Leave all screws loose until the rack tray assembly has been put into place.

- 3 Insert the rack tray assembly into the mounting brackets. See Figure 3-2.

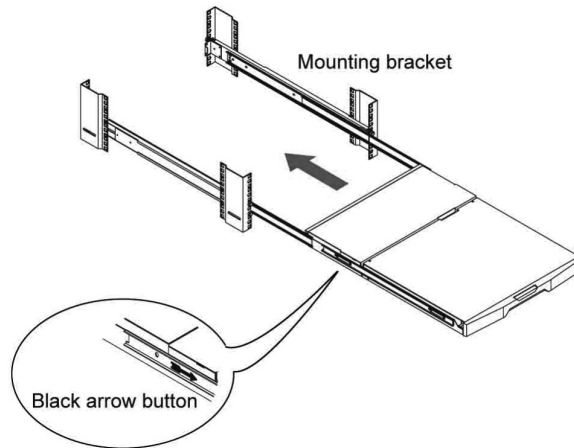


Figure 3-2. Inserting the rack tray.

- 4 Pull and hold the left and right black arrow buttons on the rails.
- 5 Return the LCD keyboard drawer to park position.
- 6 Use the remaining two M6 screws and cup washers to fix the front mounting ears of the rack tray assembly to rack rails. See Figure 3-3.

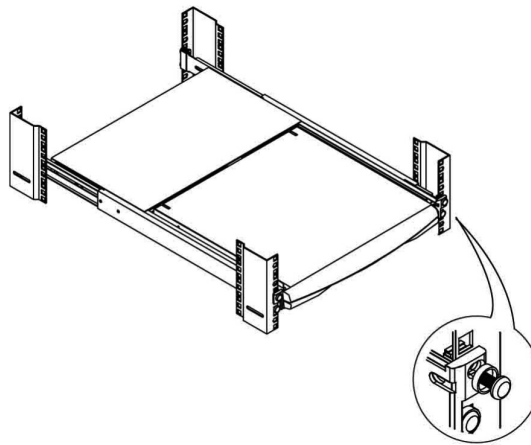


Figure 3-3. Securing the rack tray.



- 7 Tighten all eight M6 screws to complete the installation.

### 3.3 Connecting the rack tray

All server, network and power connections are located at the rear of the unit.

#### 3.3.1 The EXTERNAL link (network or remote user)

The single RJ-45 socket labeled as **EXT** is used to allow either global or remote users to login and control connected servers. The EXT port provides one of the following links (dependant on the model of rack tray):

- An ethernet network link, labeled ,
- or
- A remote extender link (to attach a ServSwitch CX Remote USB), labeled . Note: This port is NOT a network port.

##### 3.3.1.1 Connecting the external link

- 1 Wherever possible, ensure that power is disconnected from the rack tray.
- 2 Connect a CAT 5, 5e or 6 link cable to the port labeled EXT. See Figure 3-4.

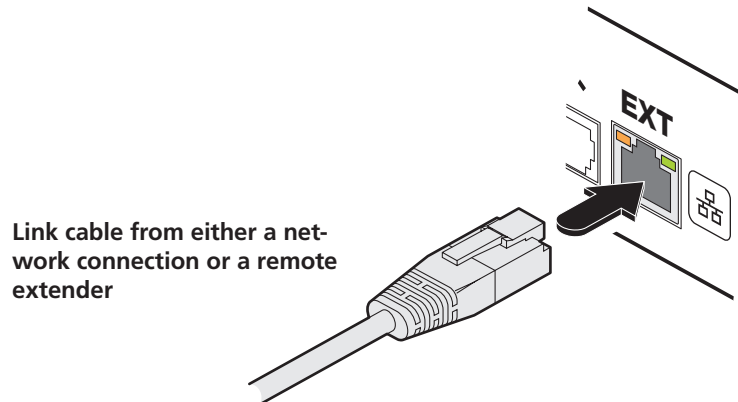




Figure 3-4. Connecting a CAT 5, 5e or 6 link cable to the EXT port.

- 3 Connect the other end of the cable as follows:
  - If the EXT port label shows  connect the link cable to a network switch/router.
  - If the EXT port label shows  connect the link cable to a Black Box ServSwitch CX Remote USB extender.

### 3.3.2 Server access module links

There are sixteen RJ-45 sockets labeled as COMPUTER CONNECTIONS on the rear panel. Each socket supports a CAT 5, 5e or 6 link to an individual server system.

*Note: The maximum length of the SAM cable can be up to 10 metres (32 feet). For model KVTA170UK-16, also ensure that the overall distance between a remote user (connected to a remote extender) and any SAM unit/server does not exceed 300 metres (980 feet).*

- 1 Wherever possible, ensure that power is disconnected from the rack tray.
- 2 Connect a CAT 5, 5e or 6 link cable to one of the COMPUTER CONNECTIONS ports. See Figure 3-5.

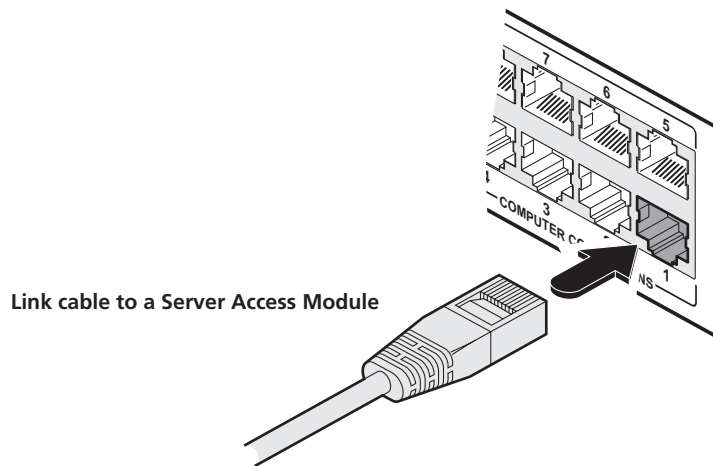


Figure 3-5. Connecting a SAM link cable.

- 3 Connect the other end of the cable to the Server Access Module (SAM) that is linked to the required server system.

For more information about connecting SAMs, please refer to the appropriate Black Box user guide as appropriate to the rack tray model being used:

- KVTA170UK-16 ---> use **ServSwitch CX Uno** user guide (KV0081A/KV0161A),
- KVTA171UK-16 ---> use **ServSwitch CX Uno IP** user guide (KV1081A/KV1161A),
- KVTA174UK-16 ---> use **ServSwitch CX Quad IP** user guide (KV4161A).

- 4 Repeat steps 2 and 3 for each server system.

### 3.4 Power Connection

The KVM module is provided with a power adapter capable of supplying the display monitor, keyboard and KVM module.

**IMPORTANT:** You must only use the manufacturer approved power adapter with the KVM module.

**IMPORTANT:** Due to the length of the power cable, if the rack tray is mounted high in the rack it may not be possible to place the power adapter at floor level. In this case it is important to mount it securely and in such a manner that it is not suspended from its output cable.

- 1 Attach the output lead from the power adapter to the 12v socket on the rear panel of the KVM module. See Figure 3-6.

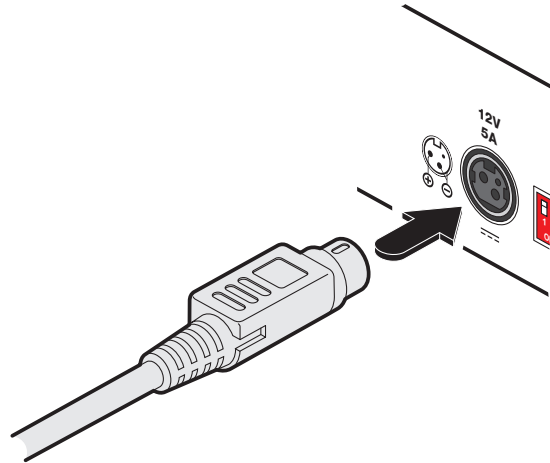


Figure 3-6. Connect the power adapter to the rear panel power socket.

- 2 Connect the IEC connector of the supplied country-specific power lead to the socket of the power adapter.
- 3 Connect the power cord to a nearby power outlet.

*Note: Both the KVM module and the power adapter generate heat when in operation and will become warm to the touch. Do not enclose them or place them in locations where air cannot circulate to cool the equipment. Do not operate the equipment in ambient temperatures exceeding 35°C. Do not place the products in contact with equipment whose surface temperature exceeds 35°C.*

#### 3.4.1 Disconnecting Power

When removing the power connection be aware that the plug has a locking mechanism to prevent accidental disconnects. To remove, pull back the flat top segment of the plug body to disengage the lock and gently pull the whole plug from the power socket. See Figure 3-7.

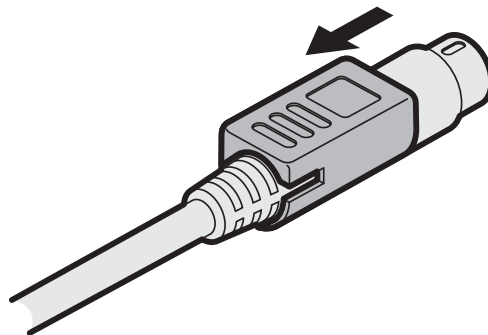


Figure 3-7. Disconnecting the power adapter.

### 4. Configuration

#### 4.1 Initial Configuration

The precise details for configuration of the KVM module will depend on the model being used. For more information, please refer to the Configuration section of the appropriate ServSwitch user guide as appropriate to the KVM module being used:

- KVTa170UK-16 ---> use **ServSwitch CX Uno** user guide (KV0081A/KV0161A),
- KVTa171UK-16 ---> use **ServSwitch CX Uno IP** user guide (KV1081A/KV1161A),
- KVTa174UK-16 ---> use **ServSwitch CX Quad IP** user guide (KV4161A).

### 5. Operation

#### 5.1 Opening and closing the rack tray

The compact rack tray is easy to open and close when required.

##### 5.1.1 To open the rack tray

- 1 Press the button on the carry handle at the front of the rack tray unit and gently pull the carry handle towards you. See Figure 5-1.



Figure 5-1. Press the release button and pull the rack tray.

- 2 Once the drawer is fully extended, lift up the carry handle to reveal the screen and keyboard. See Figure 5-2.



Figure 5-2. Lift up the carry handle.

#### Note for safe use

- Keep all liquids away from the equipment to minimise the risk of accidental spillage. Liquid spilled on to the power supply or on other hardware may cause damage, fire or electrical shock.



### 5.1.2 To close the rack tray

- 1 Fold down the screen and locate the black arrow release button on each side of the drawer slider. See Figure 5-3.

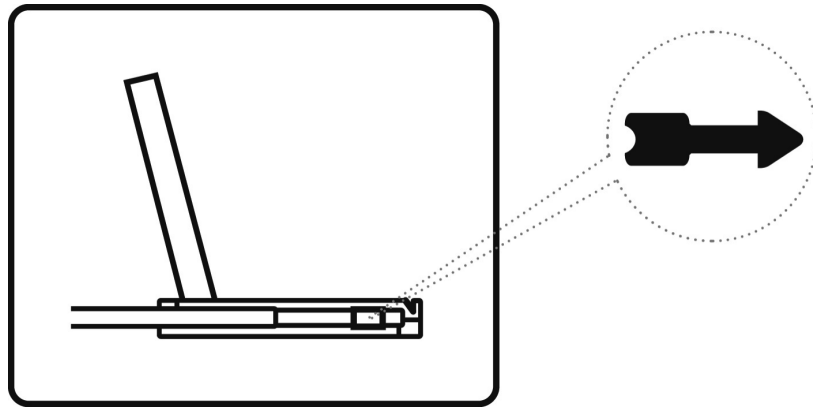


Figure 5-3. Locate the release buttons on each side.

- 2 Pull forward and hold the two black arrow buttons while slightly pushing the drawer slider in to release the locks.
- 3 Gently push the drawer slider all the way into the rack using the carry handle. Take care to keep your fingers away from the sliders. See Figure 5-4.

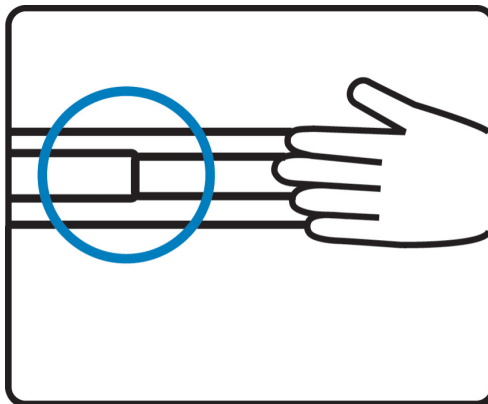


Figure 5-4. Be sure to keep your fingers away from the sliders.

### 5.2 Operating the rack tray

#### 5.2.1 The screen controls

The screen controls are located at the base of the screen. See Figure 5-5.

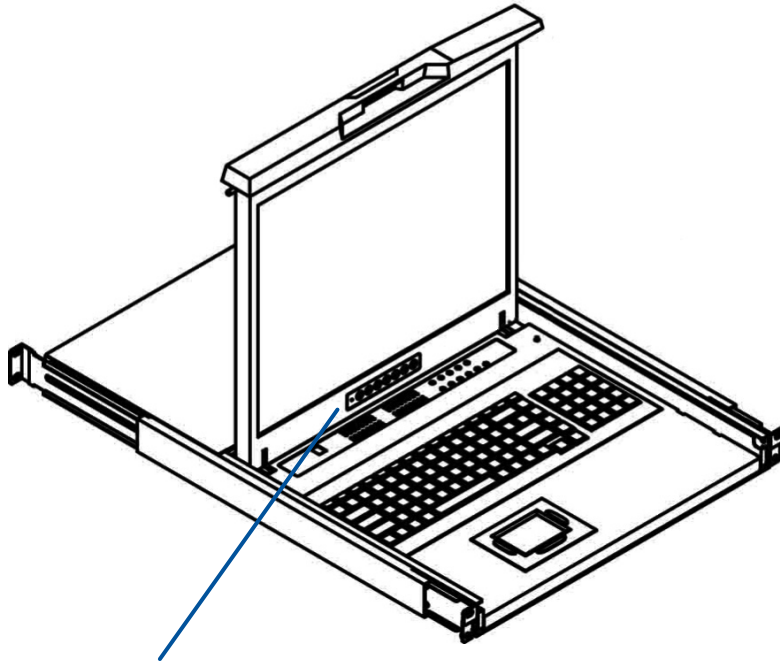


Figure 5-5. Screen controls.



Power indicator.  
(green = on, orange = power saving mode).




Power button for the screen.



Display the OSD menu for the screen.



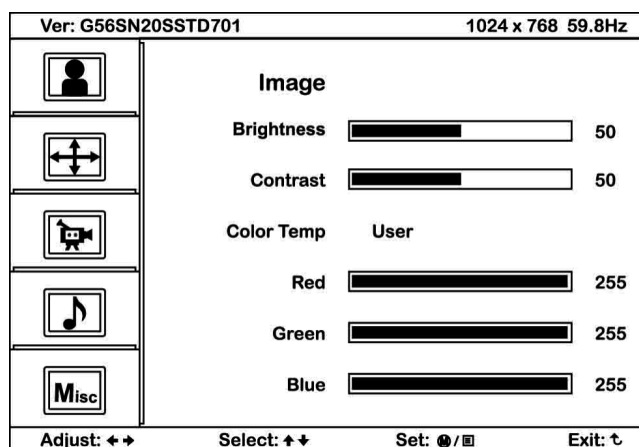
Scroll buttons to control OSD menus for the screen.  
(To auto adjust screen, press and hold  for 5 seconds).



Exit the screen OSD menu.  
(Also used to toggle digital DVI-D and analog SVGA inputs, where appropriate).

### 5.2.2 Using the OSD menu for the screen

Press the **M** button to display the OSD menu for the screen:



The various sections within the screen menu are as follows:

	<b>Image</b> Controls for brightness, contrast, colour temp, red, green and blue.
	<b>Geometry</b> Controls for auto adjust, H position, V position, phase and clock.
	<b>Not used</b>
	<b>Not used</b>
	<b>Misc</b> Controls for language, OSD position, graphic mode, OSD time, ratio, reset and timer.

### 5.2.3 Selecting server channels

In operation, you can select server channels in two main ways, including:

- On-screen menu (this is different to the OSD for the screen), or
- Keyboard hotkeys.

For more information, please refer to the Operation section of the appropriate Black Box user guide as appropriate to the rack tray model being used:

- KVTA170UK-16 ---> use **ServSwitch CX Uno** user guide (KV0081A/KV0161A),
- KVTA171UK-16 ---> use **ServSwitch CX Uno IP** user guide (KV1081A/KV1161A),
- KVTA174UK-16 ---> use **ServSwitch CX Quad IP** user guide (KV4161A).

The label above the keyboard provides useful reminders about how to select the on-screen menu and server channels:



### Appendix A. Safety Information

- For use in dry, oil free indoor environments only.
- Unplug equipment before cleaning. Don't use liquid or spray detergent; use a moist cloth.
- The unit is heavy. Therefore when installing, place the rack tray on a sturdy, level surface to prevent it from accidentally falling and causing damage to other equipment or injury to persons nearby.
- Both the rack tray and its power supply generate heat when in operation and will become warm to the touch. Do not enclose them or place them locations where air cannot circulate to cool the equipment. Do not operate the equipment in ambient temperatures exceeding 35° Celcius (95° Fahrenheit). Do not place the products in contact with equipment whose surface temperature exceeds 35° C (95° F).
- Ensure that the power adaptor is mounted so that neither its cables nor connectors are stressed.
- Observe all precautions and warnings attached to the equipment.
- Warning - live parts contained within power adapter.
- No user serviceable parts within power adapter - do not dismantle.
- Plug the power adapter into a grounded socket outlet close to the rack tray.
- Replace the power adapter with a manufacturer approved type only.
- Do not use the power adapter if the power adapter case becomes damaged, cracked or broken or if you suspect that it is not operating properly.
- Do not attempt to service the unit yourself.
- Not suitable for use in hazardous or explosive environments or next to highly flammable materials.
- If you use a power extension cord with a unit, make sure the total ampere rating of the devices plugged into the extension cord does not exceed the cord's ampere rating. Also, make sure that the total ampere rating of all the devices plugged into the wall outlet does not exceed the wall outlet's ampere rating.

## Appendix B. Screen specifications

The following specifications apply to both screen sizes unless indicated otherwise:

Maximum resolution	1280x 1024
Brightness	300 Cd/m <sup>2</sup>
Contrast ratio	1000:1
Viewing angle	160° x 160°
Display area	338 x 270mm (17" model) or 376 x 301mm (19" model)

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KVTA170UK series, rev. 1.0